

Customer :
 Project Name :
 Project No. :
 Revision No. :

SPECIFICATION for INDUCTION MOTOR



0		For Bidding			
No.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY

AC INDUCTION MOTOR DATA SHEET

Catalog No.	HSDE450-12-5009-IBSH	Item No.			Rev. No.	[]	
Project Name		Project No.			Quantity	sets	
GENERAL SPECIFICATION				PERFORMANCE DATA			
Frame Size	5009		Rated Output	335 kW		450 HP	
Type	PJP		Number of Poles	6			
Enclosure(Protection)	Totally Enclosed / IP55		Rotor Type	Squirrel Cage			
Method of Cooling	IC411(FC)		Starting Method*	D.O.L			
Rated Frequency	60 Hz		Rated Voltage	575 V	460 V	230 V	
Number of Phases	3		Current	Full Load	418.0 A	522.5 A	1,045.0 A
Insulation Class	F			Locked-rotor**	675 %	675 %	675 %
Temp. Rise at full load (by resistance method)			Efficiency				
	at 1.0 S.F	80 deg. C					
Motor Location	☐ Indoor ☐ Outdoor		50% Load 92.8 %				
Altitude	Less than 1,000 meter		75% Load 94.8 %				
Relative Humidity	Less than 80 %		100% Load 95.8 %				
Ambient Temp.	40 deg. C (Max.)		Power Factor(p.u)				
Duty Type	Continuous (S1)		50% Load 0.690				
Service Factor	1.15		75% Load 0.790				
Mounting	B3		100% Load 0.840				
Bearing	Type	Anti-Friction	Speed at Full Load 1185 r.p.m				
	DE/N-DE	NU324 / 6320C3-INS.	Torque				
	Lubricant	Grease(Polyrex-EM)	Full Load 1,991.6 lb.ft				
External Thrust	Not applicable		Locked-rotor** 135 %				
Coupling Method	☐ Direct ☐ V-belt		Breakdown** 220 %				
Shaft Extension	Single		Moment of Inertia (J)				
Terminal	Main	Cast Iron	Load(Max.) 4,666.000 lb.ft2				
Box	Aux.	Yes	Motor 264.270 lb.ft2				
	Location	Refer to Outline Drawing	Sound Pressure Level (No-load & mean value at 1m from motor)				
Application			83.5 dB(A)				
Area classification	Hazardous		Vibration 3.8 mm/sec (peak)				
Type of Ex-Protection	Class I&II, Division 2		Permissible number of Cold 2 times				
Applicable Standard	NEMA MG1, CSA C390		consecutive starts Hot 1 time				
			Paint	Munsell No.	4.0PB5.4/5.5(VL-451)		
ACCESSORIES			SUBMITTAL DRAWING				
*. Space Heater : 1EA/Motor			Outline Dimension Drawing \ Motor Weight(Approx.)				
			B3	LM-T0509B3PE001	4030 lb.		
			REMARK				
			1. Premium efficiency according to NEMA MG1				
			2. Inverter Duty @ 1.0 Service Factor & F Temperature rise				
			-. 10:1 VT (20:1 VT at 50% load)				
			-. 10:1 CT				
			-. CHp up to 1.5 times base speed, NEMA MG1 Part31				
			3. NDE side : Insulated bearing				
			4. CSA Certification				
			-. Class I, Division 2, Group A, B, C & D; Temp code : T3				
			-. Class II, Division 2 Group F & G; Temp code : T3				
			5. Shaft material : AISI4140				
SPARE PARTS			Date	DSND	CHKD	CHKD	APPD
			2024-07-13	S.H. Lee	I.K. Kim	R.G. Kim	S.W. Kim

[Note] Others not mentioned in this data sheet shall be in accordance with maker standard.

Above technical data are only design values and shall be guaranteed with tolerance of applicable standard.

Inspection and performance test shall be done according to maker standard, if not mentioned.

* In case of Inverter-Fed Motor, performance data is based on sine wave tests. It may be different from test data of Inverter combined motor.

** Data is based on rated voltage & frequency and is expressed as a percentage of full-load value.

REV	DATE	CONTENTS	REVD BY	CHKD BY	CHKD BY	APPD BY

4.72

CROWN TRITON

Premium Efficiency AC 3 Phase Motor



450HP 6P 460V				Cat. No. HSDE450-12-5009-IBSH			
Model		LATER		INS. Class		F	
Type		PJP		Duty		CONT	
Frame		5009		S.F.		1.15	
Bearing		Drive		NU324		S.F.1.00 (10:1 C.T., 20:1 V.T., NEMA-MG1 Part31)	
		Opp.		6320C3-INS.		3/4 Eff.	
Usable at						NEMA Design	
CSA Certified for		CLASS I, Div. 2, Gr. A, B, C & D CLASS I, Zone 2, Gr. IIA, IIB, & IIC		CLASS II, Div. 2, Gr. F & G		Temp. Code (sine wave)	
						Frame	
						L440FR - 500FR	
						Amb. 40°C	
						T3 (200°C)	
						Amb. 55°C	
						T3 (200°C)	
No.				-		Date	
						Weight	
						4030 lb	

4M-136053

MARINE DUTY IEEE45

Made in Korea H1



APPD BY	S.Y.KIM	UNIT	INCH	SUBJECT	CSA Class 1, Division2 Severe Duty (HSDE ,L449-500)	DWG SIZE A4 (1:1)
CHKD BY	I.K.KIM	SCALE	NONE			
CHKD BY	R.G.KIM	PROJEC'N	3rd Angle			
DSND BY	S.H.LEE	DATE	2024.06.07			
 HD HYUNDAI ELECTRIC				TITLE		
				NAMEPLATE DRAWING		
				REF. NO	4M-136053	Sheet No. of
				DWG NO	NP-HSDE450-12-5009-IBSH	Revision No. 0

Type : PJP

335kW 450HP

6 P

60 Hz

Full Load Torque : 1991.6 lb.ft

Speed at Full Load : 1185 RPM

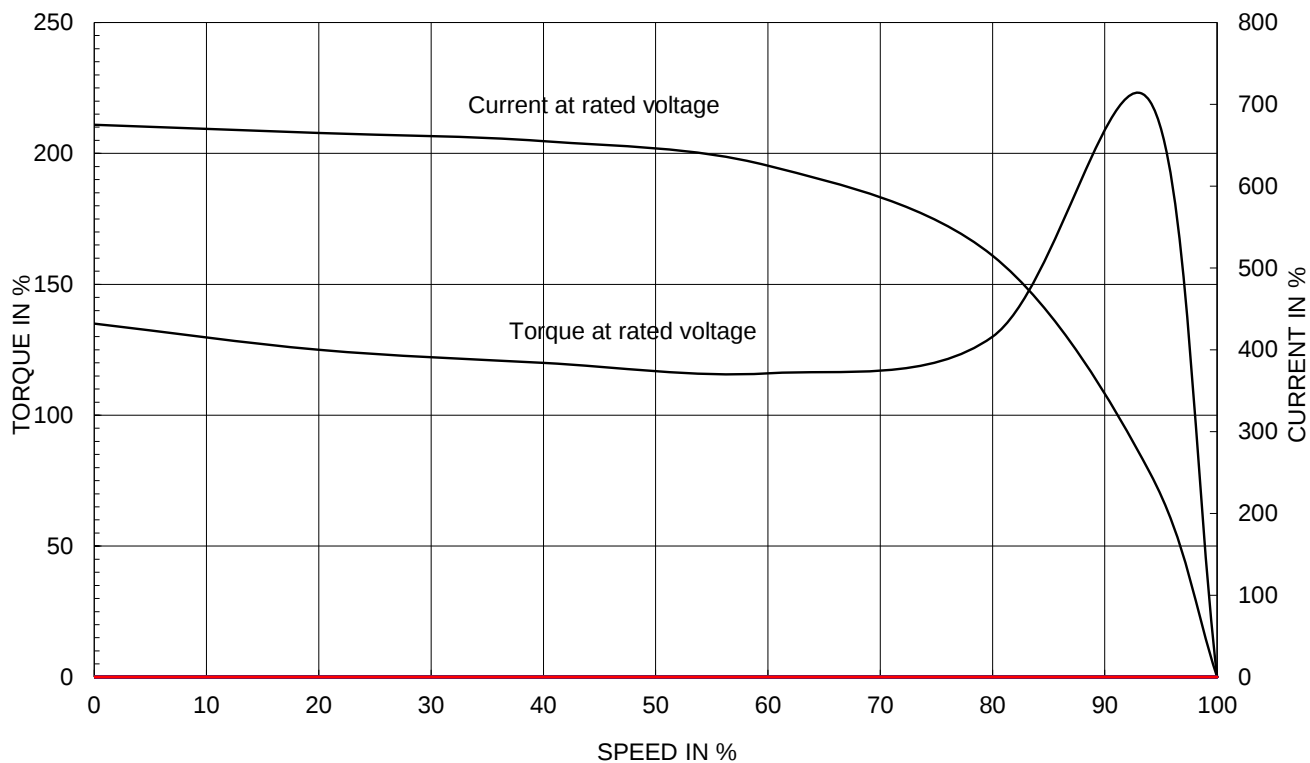
Load moment of Inertia (J) : 4666.000 lb.ft²

Rated Voltage 575V 460V 230V

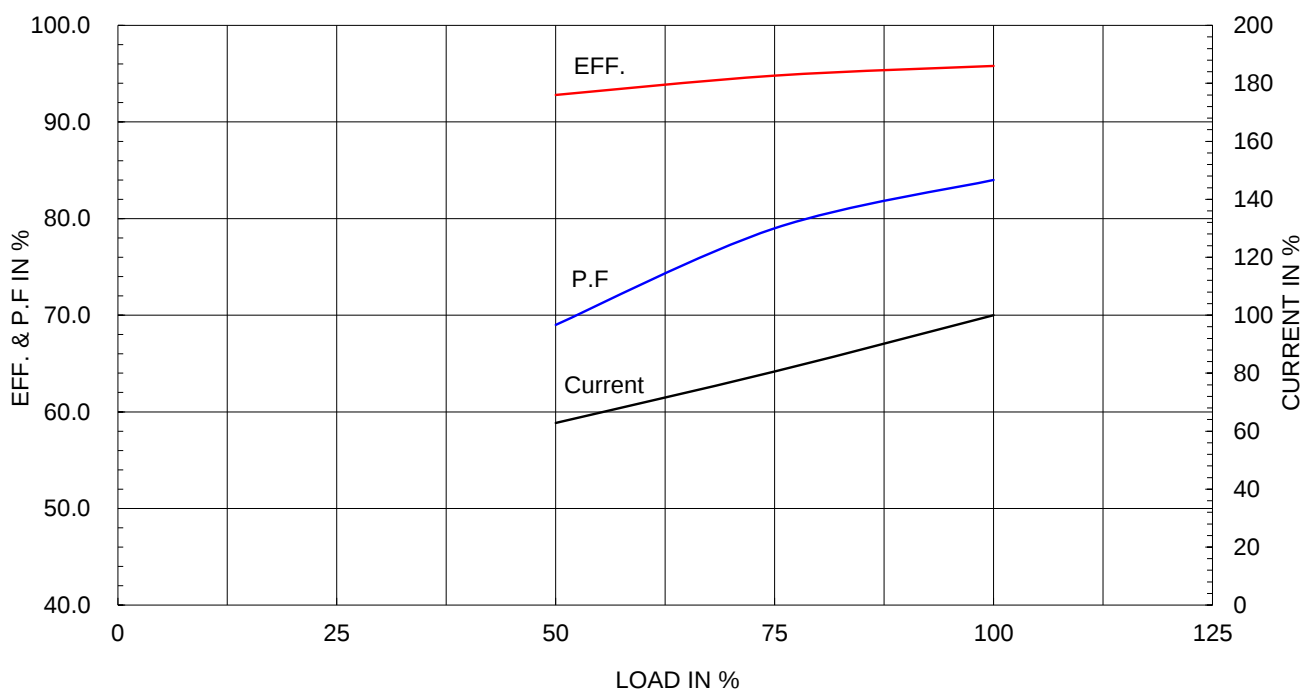
Motor moment of Inertia (J) : 264.270 lb.ft²

Full Load Current 418.0A 522.5A #####

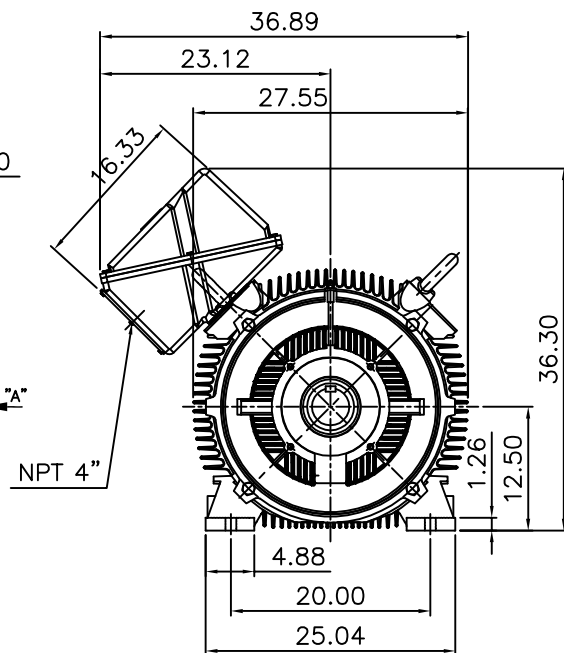
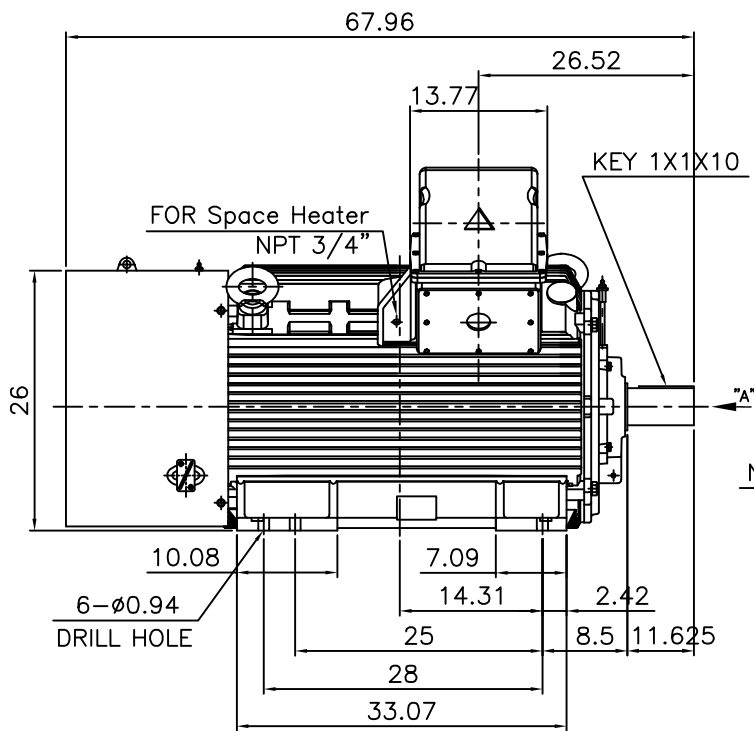
SPEED VS TORQUE & CURRENT CURVE



OUTPUT VS EFF., P.F & CURRENT CURVE



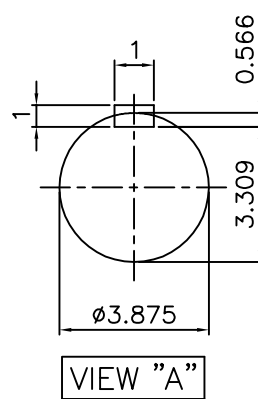
1	2	3	4
▽	50S	REV	DATE
▽▽	12.5S		
▽▽▽	3.2S		
▽▽▽▽	0.4S		



NOTE

1.TOLERANCE :

CENTER HEIGHT	12.5	+0.000 -0.060
SHAFT DIAMETER	Ø3.875	+0.000 -0.001
KEYWAY WIDTH	1	+0.003 -0.000

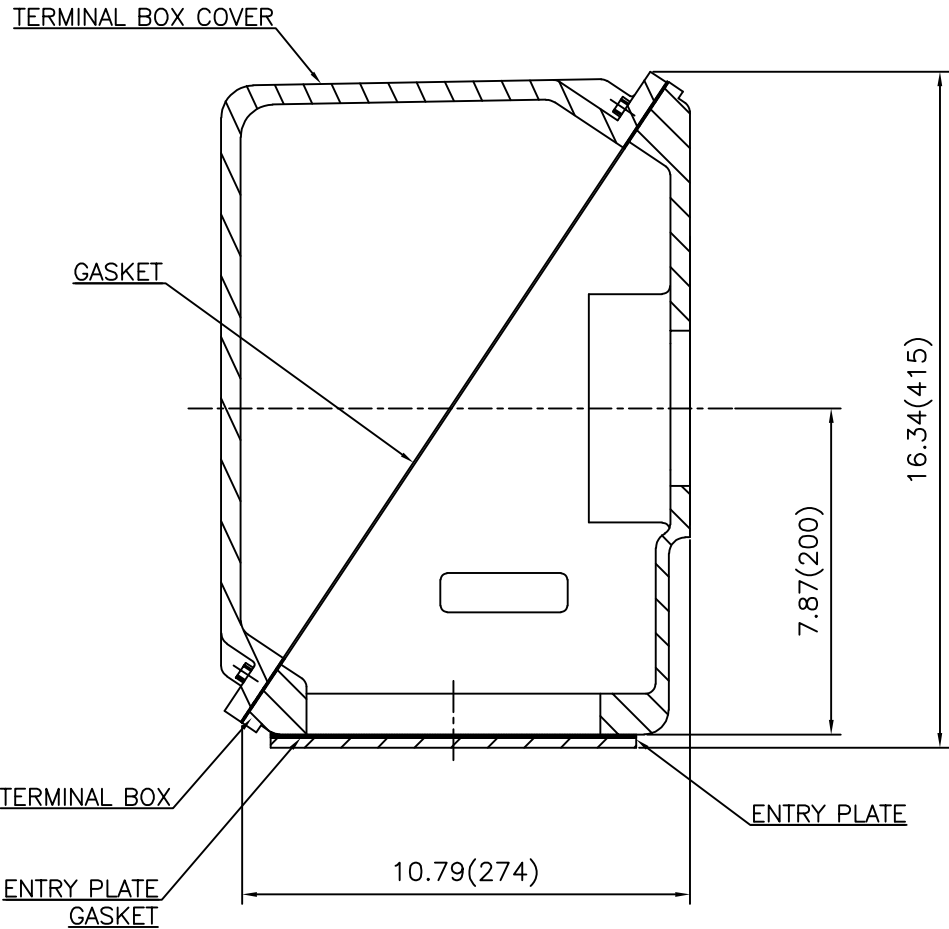
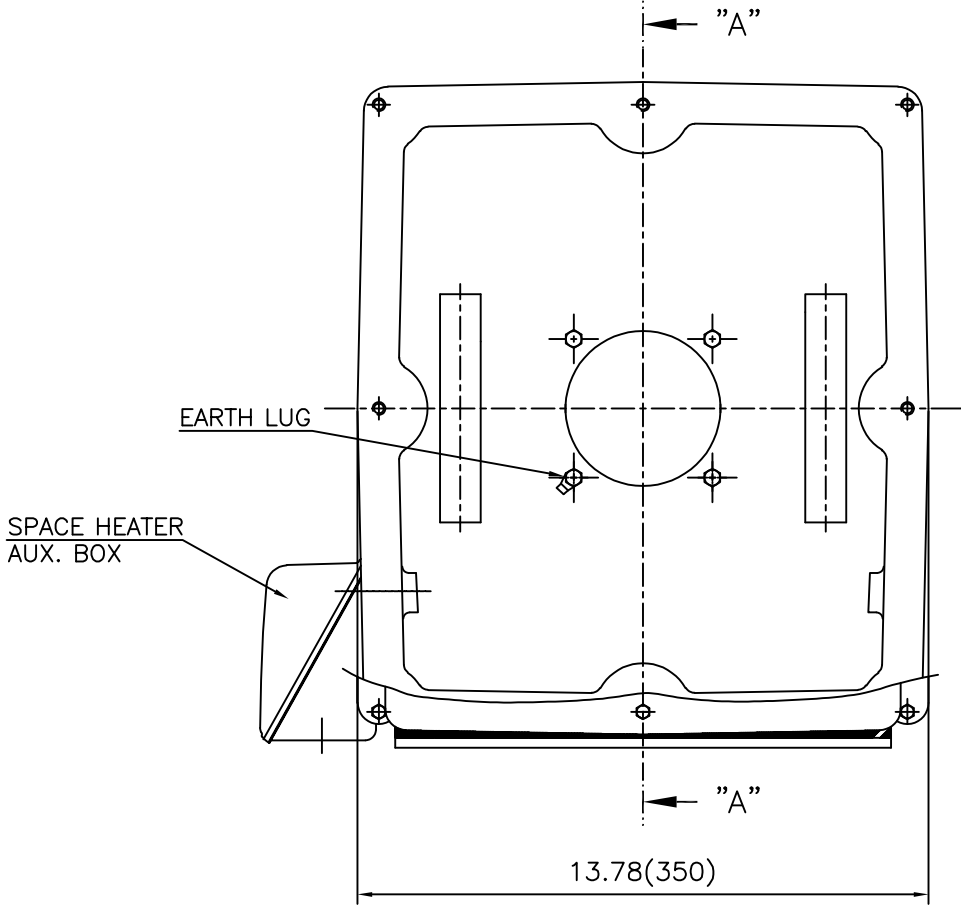


APPD BY	S.Y.KIM	UNIT	INCH	SUBJECT	Fr.5008/5009T	DWG SIZE
CHKD BY	O.J.KIM	SCALE	1/19	TITLE	CAST IRON T-BOX	A4 (1:19)
CHKD BY	R.G.KIM	PROJEC'N	3각법 (3rd Angle)	OUTLINE		
DSND BY	H.K.LEE	DATE	2021-04-27	REF. NO		Sheet No. of
				DWG NO	LM-T0509B3PE001	Revision No. 0

본 도면은 HD현대일렉트릭(주) 재산이며
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SEC. "A" - "A"

REV	DATE	CONTENTS	REVD BY	CHKD BY	CHKD BY	APPD BY

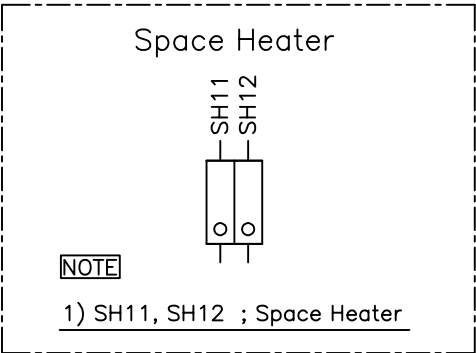
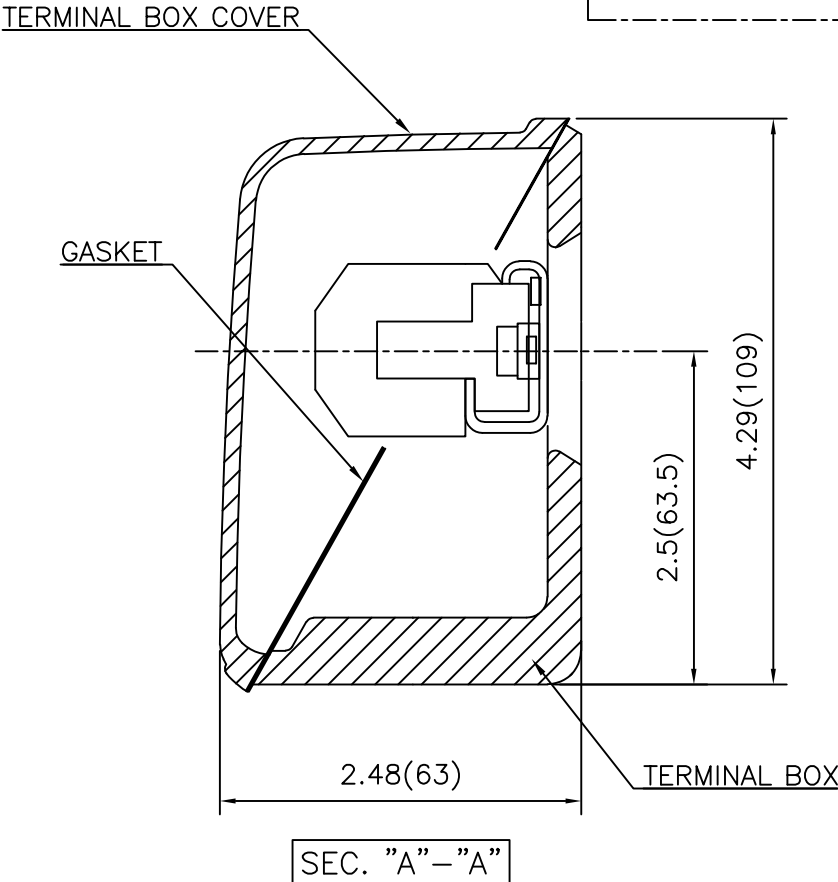
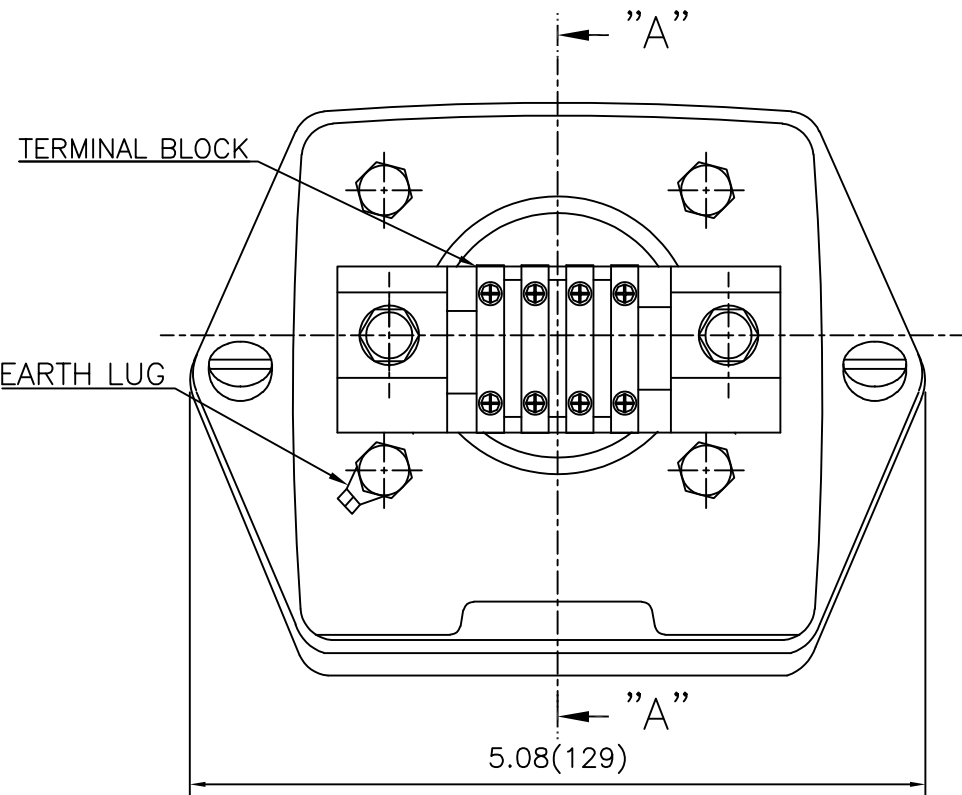
APPD BY	S.Y.KIM	UNIT	inch(mm)	SUBJECT	FR. L440 (CAST IRON)	DWG SIZE
CHKD BY		SCALE	1/3.5	TITLE	MAIN TERMINAL BOX ASS'Y	A3 (1:3.5)
CHKD BY	R.G.KIM	PROJEC'N	3rd Angle			
DSND BY	배슬희	DATE	2023-10-19			
				REF. NO		Sheet No. of
				DWG NO	3M-248452	Revision No. 0

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REV	DATE	CONTENTS	REVD BY	CHKD BY	CHKD BY	APPD BY

APPD BY	S.Y.KIM	UNIT	inch(mm)	SUBJECT	FR.180 (CAST IRON)	DWG SIZE
CHKD BY		SCALE	1/1	TITLE	SUB. TERMINAL BOX ASS'Y	A3 (1:1.1)
CHKD BY	R.G.KIM	PROJEC'N	3rd Angle			
DSND BY	배승희	DATE	2024-01-18			
HD HYUNDAI ELECTRIC				REF. NO		Sheet No. of
				DWG NO	3M-165277	Revision No. 0